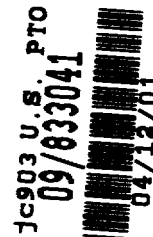


VIA HAND DELIVERY APRIL 12, 2001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re application of: ROSEN et al.

Application Serial No.: to be assigned

Art Unit: to be assigned

Filed: April 12, 2001

Examiner: to be assigned

For: ALBUMIN FUSION PROTEINS

Attorney Docket No.: PF545

STATEMENT UNDER 37 C.F.R. 1.821(f)

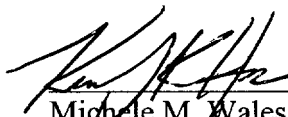
Commissioner For Patents
Washington, D.C. 20231

SCANNED, # 22 Sir:

Applicants hereby certify that the enclosed paper copy of the sequence listing and the computer-readable form of such sequence listing are identical.

Respectfully submitted,

Dated: April 12, 2001

 (Reg. No. 40352) for Michele M. Wales
Michele M. Wales (Reg. No. 43,975)
Attorney for Applicants

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9410 Key West Avenue
Rockville, Maryland 20850
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Enclosure
MMW/ts

SEQUENCE LISTING

<110> Rosen, Craig A.
Haseltine, William A.

<120> Albumin Fusion Proteins

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<141> 2001-04-12

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Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
20 25 30
cag tgt cca ttt gaa gat cat gta aaa tta gtg aat gaa gta act gaa 144
Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
35 40 45
ttt gca aaa aca tgt gtt gct gat gag tca gct gaa aat tgt gac aaa 192
Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
50 55 60
tca ctt cat acc ctt ttt gga gac aaa tta tgc aca gtt gca act ctt 240
Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
65 70 75 80
cgt gaa acc tat ggt gaa atg gct gac tgc tgt gca aaa caa gaa cct 288
Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
85 90 95
gag aga aat gaa tgc ttc ttg caa cac aaa gat gac aac cca aac ctc 336
Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
100 105 110
ccc cga ttg gtg aga cca gag gtt gat gtg atg tgc act gct ttt cat 384
Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His

115	120	125	
gac aat gaa gag aca ttt ttg aaa aaa tac tta tat gaa att gcc aga			432
Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg			
130	135	140	
aga cat cct tac ttt tat gcc ccg gaa ctc ctt ttc ttt gct aaa agg			480
Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg			
145	150	155	160
tat aaa gct gct ttt aca gaa tgt tgc caa gct gct gat aaa gct gcc			528
Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala			
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Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser			
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tct gcc aaa cag aga ctc aaa tgt gcc agt ctc caa aaa ttt gga gaa			624
Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu			
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aga gct ttc aaa gca tgg gca gtg gct cgc ctg agc cag aga ttt ccc			672
Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro			
210	215	220	
aaa gct gag ttt gca gaa gtt tcc aag tta gtg aca gat ctt acc aaa			720
Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys			
225	230	235	240
gtc cac acg gaa tgc tgc cat gga gat ctg ctt gaa tgt gct gat gac			768
Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp			
	245	250	255
agg gcg gac ctt gcc aag tat atc tgt gaa aat cag gat tcg atc tcc			816
Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser			
	260	265	270
agt aaa ctg aag gaa tgc tgt gaa aaa cct ctg ttg gaa aaa tcc cac			864
Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His			
	275	280	285
tgc att gcc gaa gtg gaa aat gat gag atg cct gct gac ttg cct tca			912
Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser			
290	295	300	
tta gct gct gat ttt gtt gaa agt aag gat gtt tgc aaa aac tat gct			960
Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala			
305	310	315	320
gag gca aag gat gtc ttc ctg ggc atg ttt ttg tat gaa tat gca aga			1008
Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg			
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agg cat cct gat tac tct gtc gtg ctg ctg ctg aga ctt gcc aag aca			1056
Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr			
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Ser	Ala	Lys	Gln	Arg	Leu	Lys	Cys	Ala	Ser	Leu	Gln	Lys	Phe	Gly	Glu		
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Lys	Ala	Glu	Phe	Ala	Glu	Val	Ser	Lys	Leu	Val	Thr	Asp	Leu	Thr	Lys		
225					230					235				240			
Val	His	Thr	Glu	Cys	Cys	His	Gly	Asp	Leu	Leu	Glu	Cys	Ala	Asp	Asp		
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Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro 370 375 380		
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Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro 405 410 415		
Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys 420 425 430		
Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys 435 440 445		
Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His 450 455 460		
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Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala 515 520 525		
Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu 530 535 540		
Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys 545 550 555 560		
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 <223> signal peptide of natural human serum albumin protein

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 Met Lys Trp Val Ser Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala
 1 5 10 15
 Tyr Ser Arg Ser Leu Asp Lys Arg
 20

<210> 30
 <211> 114
 <212> DNA
 <213> Artificial Sequence

<220>
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 <223> forward primer useful for generation of PC4:HSA
 albumin fusion VECTOR

<220>
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 <222> (5)..(10)
 <223> BamHI restriction site

<220>
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 <222> (11)..(16)
 <223> Hind III restriction site

<220>
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 <222> (17)..(27)
 <223> Kozak sequence

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<220>
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<222> (25)..(97)
<223> cds natural signal sequence of human serum albumin

<220>
<221> misc_feature
<222> (75)..(81)
<223> XhoI restriction site

<220>
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<222> (98)..(114)
<223> cds first six amino acids of human serum albumin

<400> 30
tcaggggatcc aagcttccgc caccatgaag tgggtaacct ttatttcacct tctttttctc 60

tttagctcgg cttactcgag ggggtgtgttt cgtcgagatg cacacaagag tgag      114

<210> 31
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
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<223> reverse primer useful for generation of
PC4:HSA albumin fusion VECTOR

<220>
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<222> (6)..(11)
<223> Asp718 restriction site

<220>
<221> misc_feature
<222> (12)..(17)
<223> EcoRI restriction site

<220>
<221> misc_feature
<222> (15)..(17)
<223> reverse complement of stop codon

<220>
<221> misc_feature
<222> (18)..(25)
<223> AscI restriction site

<220>
<221> misc_feature
<222> (18)..(43)
<223> reverse complement of DNA sequence encoding last 9 amino acids

<400> 31
gcagcggtag cgaattcggc ggcgcttata agcctaaggc agc      43

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<210> 32
 <211> 46
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <223> forward primer useful for inserting Therapeutic
 protein into pC4:HSA vector

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 <222> (29)
 <223> n equals a,t,g, or c

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<220>
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<220>
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<222> (45)
<223> n equals a,t,g, or c

<220>
<221> misc feature
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<223> n equals a,t,g, or c

<400> 32
ccgccgctcg aggggtgtgt ttcgtcgann nnnnnnnnnn nnnnnn

46

<210> 33
<211> 55
<212> DNA
<213> Artificial Sequence

<220>
<221> primer_bind
<223> reverse primer useful for inserting Therapeutic
protein into pC4:HSA vector

<220>
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<220>
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<400> 33
agtcccatcg atgagcaacc tcactcttgt gtgcatcnnn nnnnnnnnnn nnnnn 55

<210> 34
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> signal
<223> Stanniocalcin signal peptide

<400> 34
Met Leu Gln Asn Ser Ala Val Leu Leu Leu Leu Val Ile Ser Ala Ser
1 5 10 15

Ala

<210> 35
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<221> signal
<223> Synthetic signal peptide

<400> 35
Met Pro Thr Trp Ala Trp Trp Leu Phe Leu Val Leu Leu Leu Ala Leu
1 5 10 15

Trp Ala Pro Ala Arg Gly
20

<210> 36
<211> 23
<212> DNA

<213> Artificial Sequence

<220>

<221>primer_bind

<223>Degenerate VH forward primer useful for
amplifying human VH domains

<400> 36

caggtgcagc tgggtgcagtc tgg

23

<210> 37

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer_bind

<223>Degenerate VH forward primer useful for
amplifying human VH domains

<400> 37

caggtcaact taagggagtc tgg

23

<210> 38

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer_bind

<223>Degenerate VH forward primer useful for
amplifying human VH domains

<400> 38

gaggtgcagc tgggtggagtc tgg

23

<210> 39

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer_bind

<223>Degenerate VH forward primer useful for
amplifying human VH domains

<400> 39

caggtgcagc tgcaggagtc ggg

23

<210> 40

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer_bind

<223>Degenerate VH forward primer useful for
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<400> 40
gaggtgcagc tgttgcagtc tgc 23

<210> 41
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<221>primer_bind
<223>Degenerate VH forward primer useful for
amplifying human VH domains

<400> 41
caggtacagc tgcagcagtc agg 23

<210> 42
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<221>primer_bind
<223>Degenerate JH reverse primer useful for
amplifying human VH domains

<400> 42
tgaggagacg gtgaccaggg tgcc 24

<210> 43
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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<223>Degenerate JH reverse primer useful for
amplifying human VH domains

<400> 43
tgaagagacg gtgaccattg tccc 24

<210> 44
<211> 24
<212> DNA
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amplifying human VH domains

<400> 44
tgaggagacg gtgaccaggg ttcc 24

<210> 45
<211> 24
<212> DNA

<213> Artificial Sequence

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<223>Degenerate JH reverse primer useful for
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<400> 45

tgaggagacg gtgaccgtgg tccc

24

<210> 46

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer_bind

<223>Degenerate Vkappa forward primer useful for
amplifying human VL domains

<400> 46

gacatccaga tgacccagtc tcc

23

<210> 47

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer_bind

<223>Degenerate Vkappa forward primer useful for
amplifying human VL domains

<400> 47

gatgttgtga tgactcagtc tcc

23

<210> 48

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer_bind

<223>Degenerate Vkappa forward primer useful for
amplifying human VL domains

<400> 48

gatattgtga tgactcagtc tcc

23

<210> 49

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer_bind

<223>Degenerate Vkappa forward primer useful for
amplifying human VL domains

<400> 49

gaaattgtgt tgacgcagtc tcc 23

<210> 50
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 50
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<210> 51
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<220>
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 <223>Degenerate Vkappa forward primer useful for
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<400> 51
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<210> 52
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 52
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<210> 53
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <221>primer_bind
 <223>Degenerate Vlambda forward primer useful for
 amplifying human VL domains

<400> 53
 cagtctgtgt tgacgcagcc gcc 23

<210> 54
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>

<221>primer_bind
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 amplifying human VL domains

<400> 54
 cagtctgccc tgactcagcc tgc 23

<210> 55
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <221>primer_bind
 <223>Degenerate Vlambda forward primer useful for
 amplifying human VL domains

<400> 55
 tcctatgtgc tgactcagcc acc 23

<210> 56
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <221>primer_bind
 <223>Degenerate Vlambda forward primer useful for
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<400> 56
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<210> 57
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <221>primer_bind
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<400> 57
 cacgttatac tgactcaacc gcc 23

<210> 58
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <221>primer_bind
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<400> 58
 caggctgtgc tcactcagcc gtc 23

<210> 59

<211> 23
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 <400> 59
 aatttttatgc tgactcagcc cca 23

 <210> 60
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 <220>
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 <223>Degenerate Jkappa reverse primer useful for
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 <400> 60
 acgttttgatt tccaccttgg tccc 24

 <210> 61
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 61
 acgtttgatc tccagcttgg tccc 24

 <210> 62
 <211> 24
 <212> DNA
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 <220>
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 <400> 62
 acgtttgata tccactttgg tccc 24

 <210> 63
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221>primer_bind
 <223>Degenerate Jkappa reverse primer useful for
 amplifying human VL domains

<400> 63
 acgtttgatc tccaccttgg tccc 24

 <210> 64
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221>primer_bind
 <223>Degenerate Jkappa reverse primer useful for
 amplifying human VL domains

 <400> 64
 acgtttaatc tccagtcgtg tccc 24

 <210> 65
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
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 amplifying human VL domains

 <400> 65
 cagtctgtgt tgacgcagcc gcc 23

 <210> 66
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <223>Degenerate Jlamba reverse primer useful for
 amplifying human VL domains

 <400> 66
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 <210> 67
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
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 amplifying human VL domains

 <400> 67
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 <210> 68
 <211> 23
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<220>
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 amplifying human VL domains

<400> 68
 tcttctgagc tgactcagga ccc 23

<210> 69
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
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 amplifying human VL domains

<400> 69
 cacgttatac tgactcaacc gcc 23

<210> 70
 <211> 23
 <212> DNA
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<220>
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<400> 70
 caggctgtgc tcactcagcc gtc 23

<210> 71
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
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 <223>Degenerate Jlambda reverse primer useful for
 amplifying human VL domains

<400> 71
 aattttatgc tgactcagcc cca 23

<210> 72
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <221>turn
 <223>Linker peptide that may be used to join VH
 and VL domains in an scFv.

<400> 72
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser

1 5 10 15
 <210> 73
 <211> 23
 <212> PRT
 <213> Homo sapiens

 <400> 73
 Cys Cys Cys Ala Ala Gly Ala Ala Thr Thr Cys Cys Cys Thr Thr Ala
 1 5 10 15

 Thr Cys Cys Ala Gly Gly Cys
 20

 <210> 74
 <211> 429
 <212> PRT
 <213> Homo sapiens

 <400> 74
 Met Cys Pro Gly Ala Leu Trp Val Ala Leu Pro Leu Leu Ser Leu Leu
 1 5 10 15

 Ala Gly Ser Leu Gln Gly Lys Pro Leu Gln Ser Trp Gly Arg Gly Ser
 20 25 30

 Ala Gly Gly Asn Ala His Ser Pro Leu Gly Val Pro Gly Gly Gly Leu
 35 40 45

 Pro Glu His Thr Phe Asn Leu Lys Met Phe Leu Glu Asn Val Lys Val
 50 55 60

 Asp Phe Leu Arg Ser Leu Asn Leu Ser Gly Val Pro Ser Gln Asp Lys
 65 70 75 80

 Thr Arg Val Glu Pro Pro Gln Tyr Met Ile Asp Leu Tyr Asn Arg Tyr
 85 90 95

 Thr Ser Asp Lys Ser Thr Thr Pro Ala Ser Asn Ile Val Arg Ser Phe
 100 105 110

 Ser Met Glu Asp Ala Ile Ser Ile Thr Ala Thr Glu Asp Phe Pro Phe
 115 120 125

 Gln Lys His Ile Leu Leu Phe Asn Ile Ser Ile Pro Arg His Glu Gln
 130 135 140

 Ile Thr Arg Ala Glu Leu Arg Leu Tyr Val Ser Cys Gln Asn His Val
 145 150 155 160

 Asp Pro Ser His Asp Leu Lys Gly Ser Val Val Ile Tyr Asp Val Leu
 165 170 175

 Asp Gly Thr Asp Ala Trp Asp Ser Ala Thr Glu Thr Lys Thr Phe Leu
 180 185 190

 Val Ser Gln Asp Ile Gln Asp Glu Gly Trp Glu Thr Leu Glu Val Ser
 195 200 205

 Ser Ala Val Lys Arg Trp Val Arg Ser Asp Ser Thr Lys Ser Lys Asn

210	215	220
Lys Leu Glu Val Thr Val Glu Ser His Arg Lys Gly Cys Asp Thr Leu		
225	230	235 240
Asp Ile Ser Val Pro Pro Gly Ser Arg Asn Leu Pro Phe Phe Val Val		
	245	250 255
Phe Ser Asn Asp His Ser Ser Gly Thr Lys Glu Thr Arg Leu Glu Leu		
	260	265 270
Arg Glu Met Ile Ser His Glu Gln Glu Ser Val Leu Lys Lys Leu Ser		
	275	280 285
Lys Asp Gly Ser Thr Glu Ala Gly Glu Ser Ser His Glu Glu Asp Thr		
	290	295 300
Asp Gly His Val Ala Ala Gly Ser Thr Leu Ala Arg Arg Lys Arg Ser		
	305	310 315 320
Ala Gly Ala Gly Ser His Cys Gln Lys Thr Ser Leu Arg Val Asn Phe		
	325	330 335
Glu Asp Ile Gly Trp Asp Ser Trp Ile Ile Ala Pro Lys Glu Tyr Glu		
	340	345 350
Ala Tyr Glu Cys Lys Gly Gly Cys Phe Phe Pro Leu Ala Asp Asp Val		
	355	360 365
Thr Pro Thr Lys His Ala Ile Val Gln Thr Leu Val His Leu Lys Phe		
	370	375 380
Pro Thr Lys Val Gly Lys Ala Cys Cys Val Pro Thr Lys Leu Ser Pro		
	385	390 395 400
Ile Ser Val Leu Tyr Lys Asp Asp Met Gly Val Pro Thr Leu Lys Tyr		
	405	410 415
His Tyr Glu Gly Met Ser Val Ala Glu Cys Gly Cys Arg		
	420	425

<210> 75
 <211> 280
 <212> PRT
 <213> Homo sapiens

<400> 75
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 1 5 10 15
 Leu Leu Trp Gly Ala Pro Trp Thr His Gly Arg Arg Ser Asn Val Arg
 20 25 30
 Val Ile Thr Asp Glu Asn Trp Arg Glu Leu Leu Glu Gly Asp Trp Met
 35 40 45
 Ile Glu Phe Tyr Ala Pro Trp Cys Pro Ala Cys Gln Asn Leu Gln Pro
 50 55 60
 Glu Trp Glu Ser Phe Ala Glu Trp Gly Glu Asp Leu Glu Val Asn Ile

65		70		75		80
Ala Lys Val Asp Val Thr Glu Gln Pro Gly Leu Ser Gly Arg Phe Ile						
		85		90		95
Ile Thr Ala Leu Pro Thr Ile Tyr His Cys Lys Asp Gly Glu Phe Arg						
		100		105		110
Arg Tyr Gln Gly Pro Arg Thr Lys Lys Asp Phe Ile Asn Phe Ile Ser						
		115		120		125
Asp Lys Glu Trp Lys Ser Ile Glu Pro Val Ser Ser Trp Phe Gly Pro						
		130		135		140
Gly Ser Val Leu Met Ser Ser Met Ser Ala Leu Phe Gln Leu Ser Met						
		145		150		155
Trp Ile Arg Thr Cys His Asn Tyr Phe Ile Glu Asp Leu Gly Leu Pro						
		165		170		175
Val Trp Gly Ser Tyr Thr Val Phe Ala Leu Ala Thr Leu Phe Ser Gly						
		180		185		190
Leu Leu Leu Gly Leu Cys Met Ile Phe Val Ala Asp Cys Leu Cys Pro						
		195		200		205
Ser Lys Arg Arg Arg Pro Gln Pro Tyr Pro Tyr Pro Ser Lys Lys Leu						
		210		215		220
Leu Ser Glu Ser Ala Gln Pro Leu Lys Lys Val Glu Glu Glu Gln Glu						
		225		230		235
Ala Asp Glu Glu Asp Val Ser Glu Glu Glu Ala Glu Ser Lys Glu Gly						
		245		250		255
Thr Asn Lys Asp Phe Pro Gln Asn Ala Ile Arg Gln Arg Ser Leu Gly						
		260		265		270
Pro Ser Leu Ala Thr Asp Lys Ser						
		275		280		

<210> 76

<211> 112

<212> PRT

<213> Homo sapiens

<400> 76

Met Phe Trp Val Met Glu Thr Ala Lys Pro Pro Val Ser Glu Asp Ser
1 5 10 15

Phe Arg Leu Pro Arg Lys Trp Gly Trp Arg Thr Glu Ala Thr Ala Pro
20 25 30

His Ala Pro Val Pro Gln Ser Ile Cys Pro Arg Tyr Thr Ser Pro Cys
35 40 45

Ala Pro His Asp Cys Gly Ser Gln Thr Val Gln Gly Asn Ser Leu Ser
50 55 60

Leu Phe Tyr Thr Leu Ser His Lys Ala Pro Gln Leu Pro His Arg Val

65					70					75				80	
Pro	Ala	Pro	Leu	Phe	Cys	Lys	Tyr	Val	Lys	Arg	Lys	Lys	Cys	Lys	Arg
				85					90					95	
Trp	Ser	Leu	Gly	Trp	Ser	Ser	Ser	Leu	Gln	Leu	Arg	Leu	Leu	Thr	Met
			100					105					110		
<210> 77															
<211> 346															
<212> PRT															
<213> Homo sapiens															
<400> 77															
Met	Asp	Pro	Ala	Arg	Lys	Ala	Gly	Ala	Gln	Ala	Met	Ile	Trp	Thr	Ala
1				5					10					15	
Gly	Trp	Leu	Leu	Leu	Leu	Leu	Leu	Arg	Gly	Gly	Ala	Gln	Ala	Leu	Glu
			20					25					30		
Cys	Tyr	Ser	Cys	Val	Gln	Lys	Ala	Asp	Asp	Gly	Cys	Ser	Pro	Asn	Lys
		35					40					45			
Met	Lys	Thr	Val	Lys	Cys	Ala	Pro	Gly	Val	Asp	Val	Cys	Thr	Glu	Ala
	50					55					60				
Val	Gly	Ala	Val	Glu	Thr	Ile	His	Gly	Gln	Phe	Ser	Leu	Ala	Val	Arg
	65				70					75					80
Gly	Cys	Gly	Ser	Gly	Leu	Pro	Gly	Lys	Asn	Asp	Arg	Gly	Leu	Asp	Leu
				85					90					95	
His	Gly	Leu	Leu	Ala	Phe	Ile	Gln	Leu	Gln	Gln	Cys	Ala	Gln	Asp	Arg
			100					105					110		
Cys	Asn	Ala	Lys	Leu	Asn	Leu	Thr	Ser	Arg	Ala	Leu	Asp	Pro	Ala	Gly
		115					120					125			
Asn	Glu	Ser	Ala	Tyr	Pro	Pro	Asn	Gly	Val	Glu	Cys	Tyr	Ser	Cys	Val
	130					135					140				
Gly	Leu	Ser	Arg	Glu	Ala	Cys	Gln	Gly	Thr	Ser	Pro	Pro	Val	Val	Ser
	145				150					155					160
Cys	Tyr	Asn	Ala	Ser	Asp	His	Val	Tyr	Lys	Gly	Cys	Phe	Asp	Gly	Asn
				165					170					175	
Val	Thr	Leu	Thr	Ala	Ala	Asn	Val	Thr	Val	Ser	Leu	Pro	Val	Arg	Gly
			180					185					190		
Cys	Val	Gln	Asp	Glu	Phe	Cys	Thr	Arg	Asp	Gly	Val	Thr	Gly	Pro	Gly
		195					200					205			
Phe	Thr	Leu	Ser	Gly	Ser	Cys	Cys	Gln	Gly	Ser	Arg	Cys	Asn	Ser	Asp
	210					215					220				
Leu	Arg	Asn	Lys	Thr	Tyr	Phe	Ser	Pro	Arg	Ile	Pro	Pro	Leu	Val	Arg
	225				230					235					240
Leu	Pro	Pro	Pro	Glu	Pro	Thr	Thr	Val	Ala	Ser	Thr	Thr	Ser	Val	Thr

				245						250						255			
Thr	Ser	Thr	Ser	Ala	Pro	Val	Arg	Pro	Thr	Ser	Thr	Thr	Lys	Pro	Met				
			260					265					270						
Pro	Ala	Pro	Thr	Ser	Gln	Thr	Pro	Arg	Gln	Gly	Val	Glu	His	Glu	Ala				
		275					280					285							
Ser	Arg	Asp	Glu	Glu	Pro	Arg	Leu	Thr	Gly	Gly	Ala	Ala	Gly	His	Gln				
	290					295					300								
Asp	Arg	Ser	Asn	Ser	Gly	Gln	Tyr	Pro	Ala	Lys	Gly	Gly	Pro	Gln	Gln				
305					310					315					320				
Pro	His	Asn	Lys	Gly	Cys	Val	Ala	Pro	Thr	Ala	Gly	Leu	Ala	Ala	Leu				
				325					330					335					
Leu	Leu	Ala	Val	Ala	Ala	Gly	Val	Leu	Leu										
			340					345											

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 <212> PRT
 <213> Homo sapiens

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 Asp Glu Asp Ser Met Asp Ile Pro Leu Asp Leu Ser Ser Ser Ala Gly
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 Ser Gly Lys Arg Arg Arg Arg Gly Asn Leu Pro Lys Glu Ser Val Gln
 35 40 45
 Ile Leu Arg Asp Trp Leu Tyr Glu His Arg Tyr Asn Ala Tyr Pro Ser
 50 55 60
 Glu Gln Glu Lys Ala Leu Leu Ser Gln Gln Thr His Leu Ser Thr Leu
 65 70 75 80
 Gln Val Cys Asn Trp Phe Ile Asn Ala Arg Arg Arg Leu Leu Pro Asp
 85 90 95
 Met Leu Arg Lys Asp Gly Lys Asp Pro Asn Gln Phe Thr Ile Ser Arg
 100 105 110
 Arg Gly Ala Lys Ile Ser Glu Thr Ser Ser Val Glu Ser Val Met Gly
 115 120 125
 Ile Lys Asn Phe Met Pro Ala Leu Glu Glu Thr Pro Phe His Ser Cys
 130 135 140
 Thr Ala Gly Pro Asn Pro Thr Leu Gly Arg Pro Leu Ser Pro Lys Pro
 145 150 155 160
 Ser Ser Pro Gly Ser Val Leu Ala Arg Pro Ser Val Ile Cys His Thr
 165 170 175
 Thr Val Thr Ala Leu Lys Asp Val Pro Phe Ser Leu Cys Gln Ser Val

	180		185		190
Gly Val Gly Gln Asn Thr Asp Ile Gln Gln Ile Ala Ala Lys Asn Phe					
	195		200		205
Thr Asp Thr Ser Leu Met Tyr Pro Glu Asp Thr Cys Lys Ser Gly Pro					
	210		215		220
Ser Thr Asn Thr Gln Ser Gly Leu Phe Asn Thr Pro Pro Pro Thr Pro					
	225		230		235
Pro Asp Leu Asn Gln Asp Phe Ser Gly Phe Gln Leu Leu Val Asp Val					
		245		250	255
Ala Leu Lys Arg Ala Ala Glu Met Glu Leu Gln Ala Lys Leu Thr Ala					
	260		265		270

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 <211> 167
 <212> PRT
 <213> Homo sapiens

<400> 79
 Met Leu Thr Val Ala Leu Leu Ala Leu Leu Cys Ala Ser Ala Ser Gly
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 Asn Ala Ile Gln Ala Arg Ser Ser Ser Tyr Ser Gly Glu Tyr Gly Gly
 20 25 30
 Gly Gly Gly Lys Arg Phe Ser His Ser Gly Asn Gln Leu Asp Gly Pro
 35 40 45
 Ile Thr Ala Leu Arg Val Arg Val Asn Thr Tyr Tyr Ile Val Gly Leu
 50 55 60
 Gln Val Arg Tyr Gly Lys Val Trp Ser Asp Tyr Val Gly Gly Arg Asn
 65 70 75 80
 Gly Asp Leu Glu Glu Ile Phe Leu His Pro Gly Glu Ser Val Ile Gln
 85 90 95
 Val Ser Gly Lys Tyr Lys Trp Tyr Leu Lys Lys Leu Val Phe Val Thr
 100 105 110
 Asp Lys Gly Arg Tyr Leu Ser Phe Gly Lys Asp Ser Gly Thr Ser Phe
 115 120 125
 Asn Ala Val Pro Leu His Pro Asn Thr Val Leu Arg Phe Ile Ser Gly
 130 135 140
 Arg Ser Gly Ser Leu Ile Asp Ala Ile Gly Leu His Trp Asp Val Tyr
 145 150 155 160
 Pro Thr Ser Cys Ser Arg Cys
 165